30. A method as in claim 28, wherein said first and second metal films formed one or more closed perimeters, and said applying microwaves carries out bonding of said first and second metal films in a way that forms a cavity within said first and second metal film.

[c29]

31. A method as in claim 30, wherein said applying microwaves comprise applying microwaves within a chamber, and further comprising forming a vacuum within said chamber, to form a vacuum within said cavity after bonding.

[c30]

32. A method as in claim 28, wherein at least one of said first and second substrates include electronic components thereon.

[c31]

33. A method as in claim 32, further comprising shielding said electrical components prior to said applying microwaves.

[c32]

34. A method as in claim 28, further comprising placing a plurality of samples on a conveyor, and taking said samples into an area of microwave fields.

[c33]

35.A method as in claim 16, wherein said placing includes aligning said first and second materials.

Abstract of Disclosure

[0046] Bonding of materials such as MEMS materials is carried out using microwaves. High microwave absorbing films are placed within a microwave cavity containing other less microwave absorbing materials, and excited to cause selective heating in the skin depth of the films. This causes heating in one place more than another. This thereby minimizes unwanted heating effects during the microwave bonding process.

Figures